FORCEnet engineering conference

November 15 -17, 2005: Town & Country Convention Center - San Diego, CA

Roadmap Analysis Brief

CDR Patrick G. Roche USN

Deputy, Architecture & Human Systems (052A)

SPAWAR 052

Nov 17th 2005

Sponsored by
SPAWARSYSCOM
FORCEnet Chief Engineer

Introduction

- **INTRO**
  - Roadmap Challenges
  - Roadmap Types & DoD Guidance
- **WHERE WE WERE**
  - Roadmap Analysis Findings
  - Focus on Capability Roadmaps vs Programmatic
- **WHERE WE ARE**
  - Need to coordinate/align roadmap efforts
  - Roadmap principals identified
  - Developed candidate uniform data elements for review
- **THE WAY AHEAD**
  - Recommendations

Roadmap Challenges

- **Roadmaps CAN BE Valuable Representations of SYSTEM DEPENDENCIES**
- **The Ability To COMPARE And CONTRAST Roadmaps Is A Required Capability For ENTERPRISE-level (FORCEnet) Management**
- **The Concept Of Roadmaps Is NOT Well-Defined**
- **Data To Populate Roadmaps Is NOT Readily Available (Different formats and lack of uniform content)**
- **Roadmaps Currently CANNOT Be Validated (dependencies cannot be easily located)**
- **FREQUENCY (yearly, bi-annually, quarterly, or continuously updating Roadmap data)**
- **On-going COORDINATION to converge to a uniform data profile - need to keep approach simple**

Roadmap Types

TYPE 1 Programmatic/Milestone – generally contain program milestones, milestone phases, funding profiles, acquisition technology readiness & assessment ratings, production (LRIP, Prototype) milestones, transition/migration plan, ACQ documentation profile

TYPE 2 Capability–based – NNWC designated the lead on the Fn integrated capabilities roadmap. NOTE: including gap analysis & functional dependency assessment information with capabilities seems logical

Defense Acquisition Resource Center terminology...

Capability Roadmap – an integrated plan to guide development and investment decisions for a joint capability area. See Integrated Capability Assessment.

Integrated Capability Assessment – an assessment of a joint capability area used to align resources for input into key Planning, Programming, Budgeting and Execution (PPBE) documents and events such as the Defense Planning Guidance (DPG), Program Objectives Memorandum (POM) development, and Program and Budget reviews. See Capability Roadmap.

TYPE 3 (NEW) – FORCEnet Compliance Roadmap (FITS/FIBL requirement)

TYPE 1 & TYPE 2 tend to be intermingled in some cases

DoD Roadmap guidance?

Of the following DoD Directives & Instructions (DoD Directive 5000.1, DoD Instruction 5000.2, DoD 5000.2-R,JCIDS (CJCSI 317 0.01C, CJCSI 6212.01B, CJCSI 6212.01C), DoD Instruction 4630.8, only DoD Instruction 5000.2 includes the term 'roadmap" in Section 3.2.2 as Capability Roadmaps:

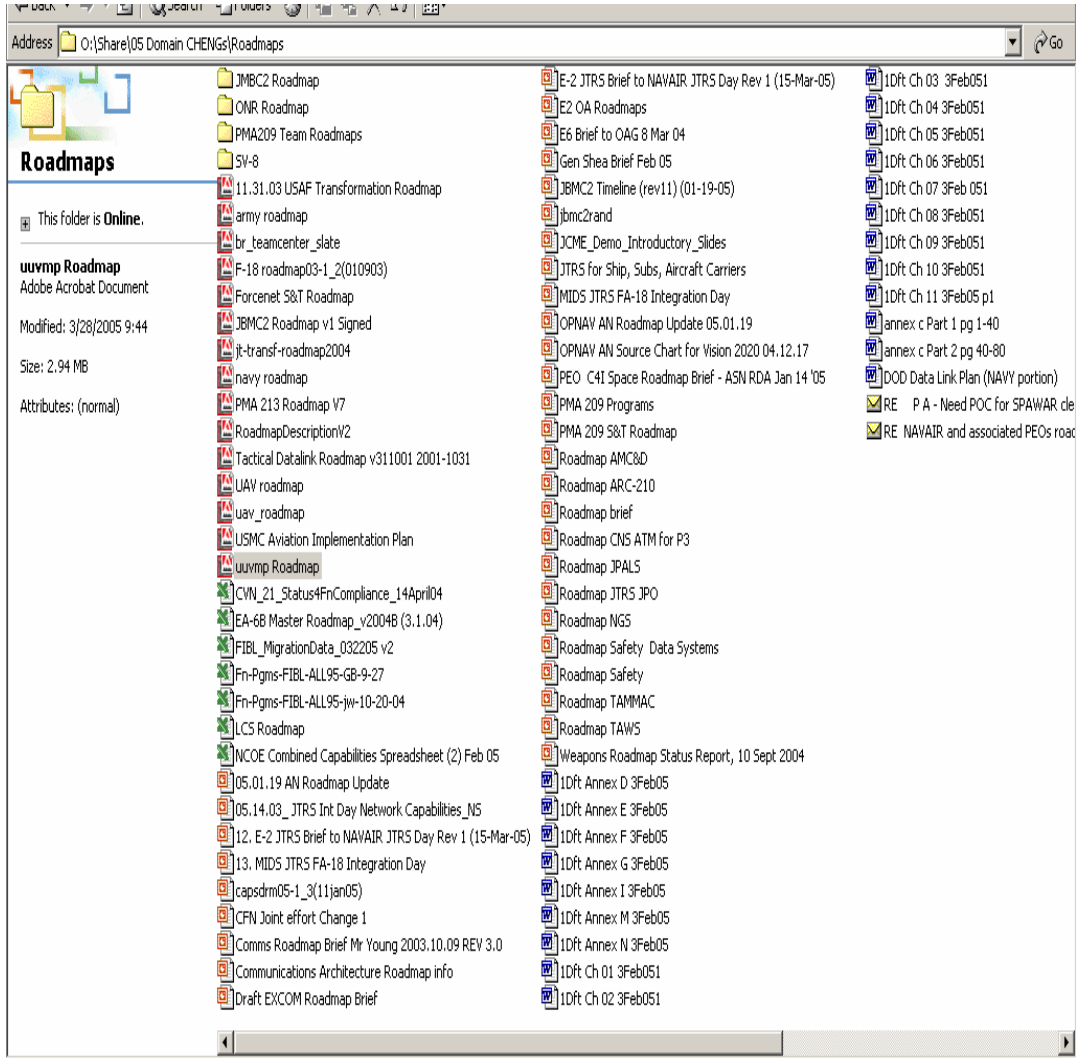
"Using the integrated architectures, the USD(AT&L) shall lead the development of integrated plans or roadmaps. The Department of Defense shall use these roadmaps to conduct capability assessments, guide systems development, and define the associated investment plans as the basis for aligning resources and as an input to the Defense Planning Guidance, Program Objective memorandum development, and Program and Budget reviews."

Capabilities Roadmaps versus Programmatic Roadmaps

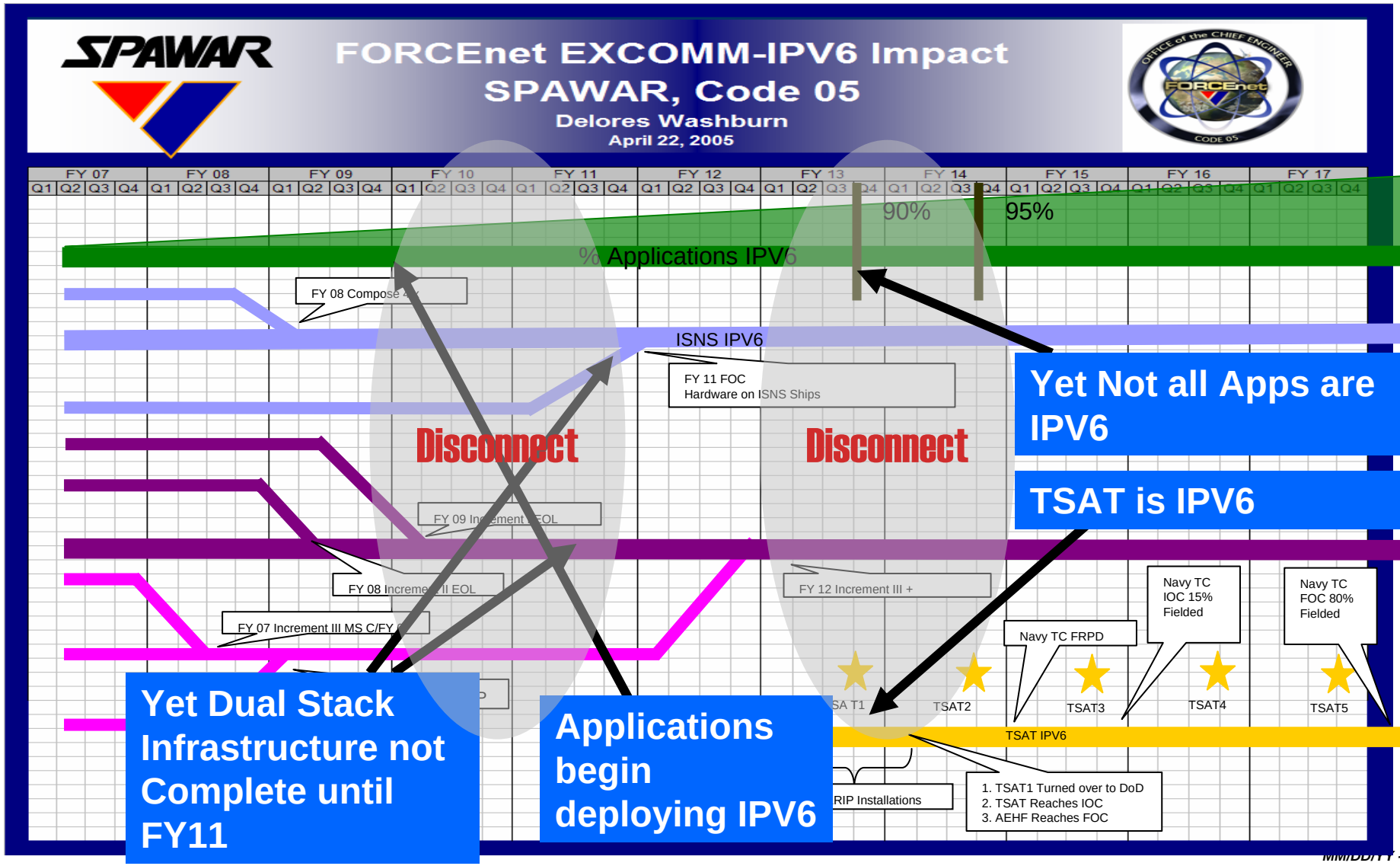
- Capabilities are characterized via an Architecture
- Architectures are expressed in DoDAF Products
  - –OV, SV, TV
- DoDAF products relate data elements together, and data can be measured
- Architecture Products don’t include cost … requires Programmatic input
  - –Cost aligns to Systems and Programs

Where we were - *Roadmap Investigation: Findings*

- **There is no common definition of the term "Roadmap"**
- **Over 70 different Roadmaps types were collected**
- **There is no standard format (PP, EXCEL, Word etc)**
- **The data in Roadmaps cannot be extracted and used by other Roadmaps**
- **Roadmap production and validation is a manpower, intensive manual process**

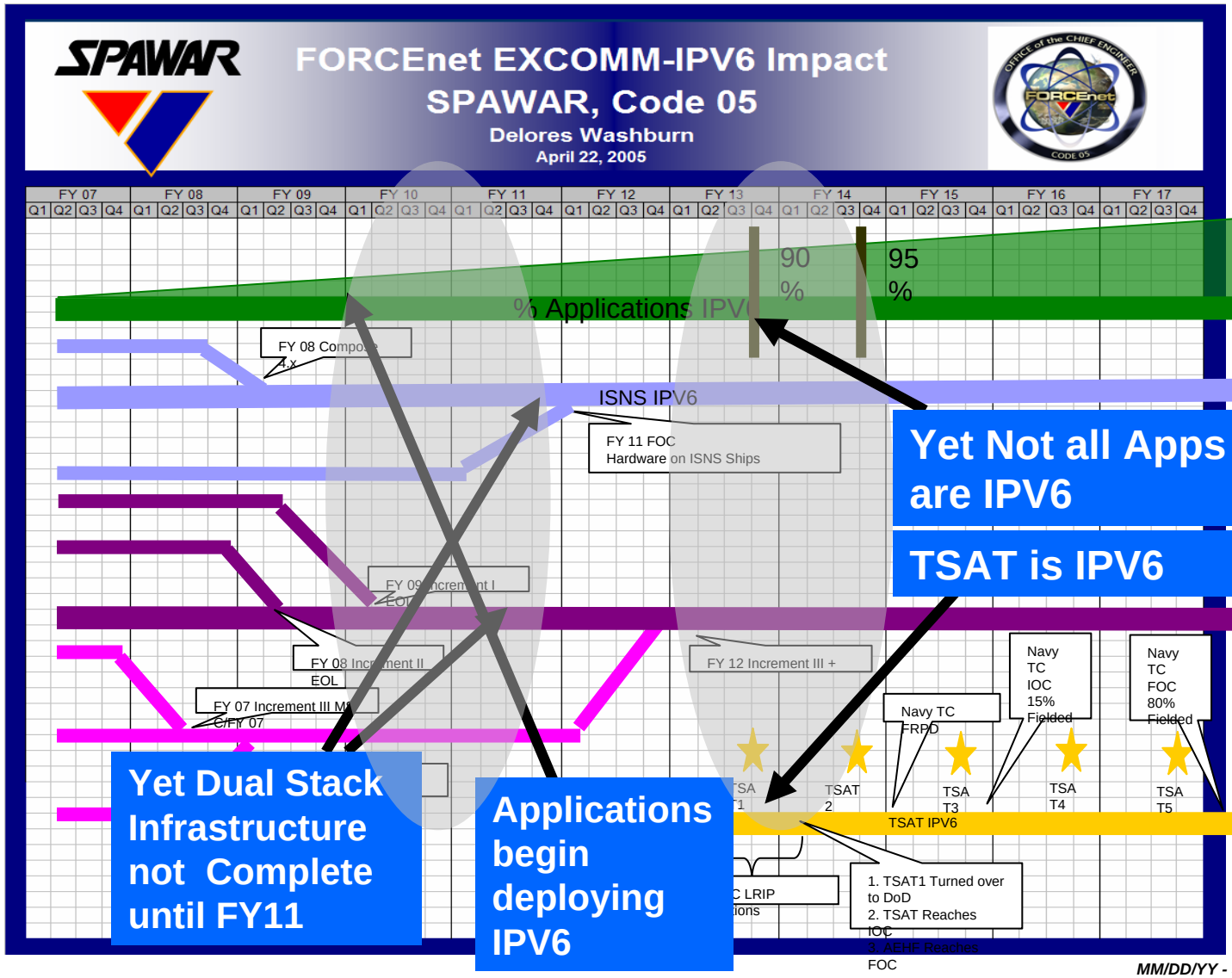


Example of need for Roadmap Alignment



Example of need for Roadmap Alignment

- **No Single visualization can show all the Interdependencies**
- **Need database to preserve integrity of relationships**
- **Need data ownership to ensure data validity**



Roadmap analysis/conclusions

Most Roadmaps are tailored to specific needs

- They come in different formats
- Contain different kinds of info
  Some are process-oriented
- No rules or standardized formats for roadmaps – standardization implies one-way for all to do roadmaps and this would eliminate the flexibility to address a specific audience and topic area – a desirable quality of roadmaps
- Generally roadmap products contain time track data (e.g. acquisition milestones, capabilities, acquisition funding profiles (current funding levels), IOC dates, program timelines). Additionally, non-time track data are also found (e.g. Lead Agency, System Objective/Description, unfunded follow-on activity with est. costs etc.)

Where We Are - Roadmaps

- FORCEnet Engineering Conference Working Group of Principals
- PEO IWS, C4I, IT and ONR S&T
- Need to address ways to coordinate/align roadmap efforts
- Some candidate uniform data elements developed for review

The Way Ahead - Recommendations

- Recommend aligning Roadmaps via a set of uniform data elements (common subset of data) vice standardization

- Recommend synchronizing Roadmaps with DoDAF products (SV4, SV5, SV8, SV9, TV2)

- Recommend keeping the effort **UNCLASS**

- Recommend that our Team final product be a White Paper summarizing data element recommendations

NOTE: We do not recommend telling roadmap principals how to do their individual roadmap products (e.g. standardize all roadmaps products in the same format) rather provide an agreed upon set of uniform roadmap data and **this data only will be supplied in a common format** – final roadmap product creation will be at the roadmap principals discretion